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(54) **Data recording apparatus and method using 3D optical memory, and authentication apparatus and method using 3D optical memory**

(57) Disclosed herein are a data recording apparatus and method using three dimensional (3D) optical memory and an authentication apparatus and method using 3D optical memory. The data recording apparatus includes a recording excitation light splitting unit, a condition storage unit, and a data recording unit. The recording excitation light splitting unit splits recording excitation light into first split light and second split light. The condition

storage unit stores recording conditions including information about the waveforms, wavelengths and phases of the split light and information about an arrangement of reflection mirrors configured to reflect the split light. The data recording unit records storage data by making the split light incident on the 3D optical memory through the reflection mirrors under the recording conditions.

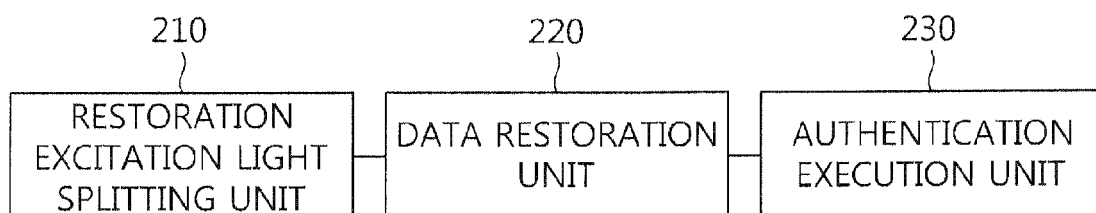


FIG. 2



EUROPEAN SEARCH REPORT

Application Number
EP 13 19 4979

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EPO FORM 1503 03.82 (P04C01)

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 September 2016	Examiner Wunderlich, Doreen
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 13 19 4979

5

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